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09/608,234	06/30/2000	Jeff J. Guell	A-1559	9986

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EXAMINER	
LAO, LUN YI	

ART UNIT	PAPER NUMBER
2673	17

DATE MAILED: 06/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/608,234	Applicant(s) GUELL ET AL.	
	Examiner Lao Y Lun	Art Unit 2673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 May 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-3, 6-8, 10-14, 17 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hale et al(5,317,394) in view of Fergason(5,343,313).

As to Claims 1-3, 6-8, 10-14, 17 and 20-21, Hale et al teach an enhanced vision system for mobile vehicles(aircrafts) comprising an array of vision sensors(71, 72, 73, 74)(each or sensors(71, 72, 73, 74) having a plurality of an array of sensors) mounted on a vehicle(aircraft, 70)(see figures 4-6; column 5, lines 58-68 and column 6, lines 1-9); a recording medium(22) for storing the image signals from the array of vision sensors(71, 72, 73, 74)(see figures 1, 5-6; column 1, lines 10-13; column 3, lines 49-68 and column 4, lines 1-2); a processor(20); a helmet-mounted display and a tracking system(see figure 1 and column 4, lines 1-18). Hale et al teach a display for receiving output signal from the processor(20, 39) and superimpose it on the helmet-

mounted display(see figures 1, 2; column 4, lines 1-18 and lines 65-68; and column 5, lines 1-26).

It would have been obvious to have sensors(71-74) are non-turret mounted unmovable sensors since Hale et al have disclosed a large number of staring sensors fixed to a host platform with maximal coverage with minimal moving parts, it would reduce cost and more reliable(see column 1, lines 65-68 and column 2, line 1) and movable sensors can be replaced by unmovable sensors(see column 2, lines 39-43).

Hale et al fail to disclose a see-through visor.

Fergason teaches a method for superimpose virtual images on a see-through visor(14) which selectively permits an operator to view actual images disposed in front of the visor(see figures 1-11; column 3, lines 7-18; column 4; lines 54-68; column 5, lines 8-11; column 6, lines 6-13, lines 54-59 and lines 64-67). It would have been obvious to have modified Hale et al with the teaching of Fergason, so as to allow an operator to view both outside scene and electronic images(see column 5, lines 8-11).

As to claims 2-3, 6 and 8, Hale et al teach these array of vision sensors(71, 72, 73, 74) is mounted close to the cockpit area and in the upper radome area of the nose of the aircraft(70) (see figures 5-6 and column 6, lines 1-4).

As to claims 7-8 and 11, Hale et al teach the array of vision sensors(71-74) having an elevation field of view of approximately 24° or having a field of

view straddling the horizontal horizon, or hemispherical field of view or a spherical field of view(see figures 5-6 and column 6, lines 1-4).

As to claims 12-14, Hale et al teach one of vision sensors(71-74) providing an infrared search and track function; at least one sensors(71-74) providing a separate signal to the processor(20) and the orientation of the vision sensors(71-74) are different(see figures 1, 5-6; column 1, lines 5-26; column 2, lines 51-68; column 3, lines 1-2, lines 34-35 and lines 53-68; column 4, lines 1-18 and lines 36-64; and column 6, lines 1-4).

As to claim 20, Hale et al teach a manual input device(26)(see figure 1 and column 5-18).

3. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hale et al(5,317,394) in view of Fergason(5,343,313) and Hale et al(5,418,364).

Hale et al(5,317,394) as modified fail to disclose the array of vision sensors having an elevational field of view of approximately 51°.

Hale et al(5,418,364) teach a system having an array of vision sensors(22, 24) having an elevational field of view of approximately 51°(see figure 3 and column 4, lines 27-39). It would have been obvious to have modified Hale et al(5,317,394) as modified with the teaching of Hale et al(5,418,364), so as to eliminate the number of an array of sensors to view same range of field of view.

4. Claims 4-5 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hale et al(5,317,394) in view of Fergason(5,343,313) and Myrick(5,166,789).

As to claims 4-5 and 15, Hale et al as modified fail to disclose one of the infrared sensors having higher resolution than the others and one of the vision sensors is reward-looking.

Myrick teaches a system having an infrared sensors(12, 14)(infrared camera) having different resolutions(see figures 1-3 and column 6, lines 29-67) and sensor(14) is rearward-looking. It would have Myrick been obvious to have modified Hale et al as modified with the teaching of Myrick, so a view could observe two different images from two camera(one is for viewing a general image(A), one is for viewing a detail image(B or C))(see figure 2 and column 6, lines 33-43).

5. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hale et al(5,317,394) in view of Fergason(5,343,313) and Muller(4,057,782).

Hale et al as modified fail to disclose an operational parameter of a vehicle.

Muller teaches a system having a group of operation parameters(speed, altitude, attitude and engine status) selected by an operator(see figure 5; column 5, lines 57-68 and column 4, lines 1-14). It would have been obvious to have modified Hale et al as modified with the teaching of Muller, so a pilot would know the operating conditions of an aircraft.

6. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hale et al(5,317,394) in view of Fergason(5,343,313), Myrick(5,166789) and Kaneko(5,237,418).

Hale et al as modified teach two different images can be displayed on a split screen. Hale et al as modified fail to provide picture-in-picture image on a display.

Kaneko teaches a display system for display two different images(P-TV or C-TV) on a picture-in-picture screen mode or a split screen mode(see figures 3, 6 and column 4, lines 19-30). It would have been obvious to have modified Hale et al as modified with the teaching of Kaneko, so a viewer could observe most interested image on a bigger display portion and less interested image on a smaller display portion.

7. Claims 22-24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hale et al(5,317,394) in view of Fergason and Okamura et al(5,572,343).

As to claims 22-24 and 26, See the discussion of Hale et al on paragraph #3 above.

Hale et al as modified teach a controller for selectively controlling an intensity of light pass through the screen(see Fergason's figures 1-11; column 7, lines 12-25 and column 14, lines 3-66).

Hale as modified fail to selectively disable selected regions of the screen so that light can not pass through those selected region.

Okamura et al teach a display device having a plurality of regions(see figures 24, 25, 36(a)-36(e)) and a plurality of light shutters(56_1-56_3) and a controller(61) for selectively controlling an intensity of light pass or not pass(opaque) the screen regions(see figures 33-35; abstract; column 17, lines

32-57; column 23, lines 22-68; column 24 and column 25, lines 1-25). It would have been obvious to have modified Hale et al as modified with the teaching of Okamura et al, since Fergason has disclosed a helmet-mounted display having a plurality of shutters(21-23)(see figures 1-10 and column 7, lines 12-53) and an operator could selectively view different part of outside images and the different part of electronic images(see column 2, lines 54-61).

As to claim 26, Hale et al teach an operator can selectively manually control(a keyboard, a mouse, a joystick) and select particular output images from a plurality of sensors(71-74)(see figures 1, 5 and column 4, lines 1-8).

8. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hale et al(5,317,394) in view of Fergason(5,343,313), Okamura et al(5,572,343) and Krouglicof et al(4,649,504).

Hale et al as modified fail to disclose an emitter mounted on a helmet of an operator.

Krouglicof et al teach a display system having an emitter(3) mounted on a helmet of an operator and a detector(5,7)(see figure 1 and column 2, lines 26-51). It would have been obvious to have modified Hale et al as modified with the teaching of Krouglicof et al, since Hale et al have disclose a motion sensor mounted on a helmet for detecting the position of an operator's head(see Hale's column 4, lines 7-19) and Hale et al as modified by Krouglicof et al would have a three dimensional position data(see Krouglicof's abstract).

Response to Arguments

9. Applicant's arguments filed on May 6, 2004 have been fully considered but they are not persuasive.

Applicants argue that Fergason does not disclosure the information display by the heads-up display corresponds to the real word image as claimed on page 2. The examiner disagrees with that since Fergason teaches a display connected to receive the output signal from the processor(computer 302) and superimpose it on a see-through visor(14, 21) which selectively permits an operator to view actual images disposed in front of the visor(14, 21)(the intensity of light transmitted to viewer's eyes 27 can be adjusted by a manual controller(38)) as claimed by applicants(see figures 1, 2, 11; column 6, lines 54-64; column 7, lines 5-25; column 8, lines 64-68; column 9, lines 1-3; column 13, lines 2-49 and column 21, lines 6-20).

Applicants argue that Hale et al teach away from using staring type sensors. The examiner disagrees with that since Hale et al point out the tracking system can be either used staring sensors or movable sensors(see column 2, lines 39-43) and the staring sensors are distributed to obtain maximal coverage with minimal moving parts, and it would reduce cost by eliminating moving parts and more reliable(see column 1, lines 65-68 and column 2, line 1). Even though Hale et al point out some disadvantage of using staring type sensors, Hale et al do not mention that staring sensors can not be used in the system of Hale et al have disclosed.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lun-yi, Lao whose telephone number is (703) 305-4873.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala, can be reached at (703) 305-4938.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

June 10, 2004

Lun-yi Lao
Primary Examiner